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Do Undergraduate Business Schools Cultivate Creative Thinking: The Wharton Curriculum As A Case In Point

Abstract

This paper describes a research study conducted to ascertain whether undergraduate business schools cultivate creative thinking, using the Wharton undergraduate education as a case in point. To determine this, past course syllabi were analyzed for objective(s) of cultivating creative thinking. This was followed by semi-structured interviews with Wharton students and faculty. The study found that while there is evidence that Wharton aims to cultivate creative thinking, students and faculty agree that it could do more.

Keywords

higher education, business education, creative thinking, creativity

Disciplines

Business

DO UNDERGRADUATE BUSINESS SCHOOLS CULTIVATE CREATIVE THINKING:
THE WHARTON CURRICULUM AS A CASE IN POINT

By

Emily Y. Hu

An Undergraduate Thesis submitted in partial fulfillment of the requirements for the
JOSEPH WHARTON SCHOLARS

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MAY 2017

Acknowledgements: A special thank you to “Dr. G,” whose guidance has shaped my undergraduate education from beginning to end. You have my enduring gratitude.

ABSTRACT

This paper describes a research study conducted to ascertain whether undergraduate business schools cultivate creative thinking, using the Wharton undergraduate education as a case in point. To determine this, past course syllabi were analyzed for objective(s) of cultivating creative thinking. This was followed by semi-structured interviews with Wharton students and faculty. The study found that while there is evidence that Wharton aims to cultivate creative thinking, students and faculty agree that it could do more.

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1. INTRODUCTION

In 2011, Stanford professor Anne Colby and her colleagues published *Rethinking Undergraduate Business Education*. In the book, they write that undergraduate business institutions would benefit from fortifying their curricula with liberal learning. One of the dimensions of liberal learning is multiple framing, which one could colloquially take to mean creative thinking. The debate over the place of liberal learning in business schools then poses an offshoot question: Do undergraduate business schools cultivate creative thinking?

This research study aimed to find out, using the Wharton School at the University of Pennsylvania as a case study. While Wharton is known for business education, it also has a history of integrating liberal learning into its curriculum, suggesting that creative thinking is valued at the school. This paper details findings from students and faculty interviews, which were conducted to ascertain whether Wharton cultivates creative thinking and to what extent.

Of courses with syllabi documented on Wharton's internal website Spike, 13.56% include some objective of cultivating creative thinking. The faculty who teach those courses do so because they see value in helping students make connections between disparate thoughts, so that students can apply those insights to solving problems. Despite the challenges of tempering grade-myopia in students, popular methodologies for cultivating creative thinking include experiential learning and group projects. Students and faculty believe that equipping students with creative thinking skills now will pay off later, when students enter the workforce and beyond. The need to do so seems especially heightened at Wharton, because the common belief is that these students will one day become influencers in society.

As the Wharton curriculum undergoes a redesign next academic year, there is hope there will be even more room for liberal learning and creative thinking in the future.

2. LITERATURE REVIEW

The following literature review details the existing scholarly literature on the topics of undergraduate business education, liberal learning, and creative thinking. This serves to contextualize this research study.

2.1 Trends in Undergraduate Business Education

At present, the most popular undergraduate degree in the United States is a business degree. In academic year 2013-14, nearly 1 in 5 Bachelor's degrees awarded were in the field of business, compared to nearly 1 in 7 in 1970-71 (National 2015). One explanation for the rising pre-professional bend in higher education today is the changing job market and intensified desire for material wealth. As *The Atlantic* writes, "students are clamoring for degrees that will help them succeed in a shifting economy" (Applebaum 2016). Since 1970, the percentage of freshmen who consider "being very well off financially" as an "essential" or "very important" goal has risen from 36.2 to 73.2 (Bok 2006). To meet this growing demand for pre-professional education, educators feel a responsibility to deliver on the hefty task of educating the nation's young minds.

In 2011, *Rethinking Undergraduate Business Education* was published. Written by Anne Colby, Thomas Ehrlich, William M. Sullivan, and Jonathan R. Dolle, the book became a compelling influence in academic circles. The book details takeaways from the Carnegie Foundation's three-year Business, Entrepreneurship, Liberal Learning project, which intended to ascertain how educators can ensure that undergraduate students who specialize in professional fields can still receive the benefits of a liberal arts education. Research has shown that liberal learning helps students build leadership skills, civic engagement, and communication skills

(Guthrie and Callahan 2016). Moreover, the Association of American Colleges and Universities maintains that liberal education is “an approach to learning that empowers individuals and prepares [students] to deal with complexity, diversity and change...” (Scott 2014). In fact, W. E. B. DuBois once reaffirmed the synonymous nature of “liberal education” and “excellence” when arguing that members of the African-American community deserved high quality educations (Schneider 2004). For reference, the terms “liberal learning,” “liberal education,” and “liberal arts” are often used interchangeably.

After examining institutions across the United States, the authors of *Rethinking Undergraduate Business Education* found that many undergraduate business curricula were too narrow and could better prepare students to make sense of the world and their place in it (Colby, Ehrlich, et al. 2011). Formal business educations typically emphasize the technical skills of problem-solving and decision-making, but do less to provide the “broad perspective, including the skills of problem search and framing, strategising, and implementing change” needed to execute said problem-solving (Harney 2013). A 2014 study found that business majors showed substantially lower gains in writing, complex reasoning, and critical thinking when they graduated college, as compared to their peers in other majors (Steedle 2014).

Research also suggests that the impact of a business education is small, even in fields traditionally considered pipelines from business schools. A study by consulting firm McKinsey & Company found that at years 1, 3, and 7 of working at the firm, consultants without a formal business education were receiving better evaluations, on average, than their counterparts who had attended business school. Although this research was based on the MBA degree, rather than an undergraduate business degree, it can be understood that business school education has not been as effective as intended (Pfeffer and Fong 2002).

Employers have begun to take note. “Firms are looking for talent. They're not looking for content knowledge, per se. They're not hiring someone just because they took an M&A class,” says Scott Rostan, founder of Training the Street Inc. (Korn 2012). The company provides financial training courses for new hires at investment banks. Liz Kirschner, head of talent acquisition at Morningstar Inc., a Chicago-based investment research firm, says, “It’s easier to hire people who can write – and teach them how to read financial statements – rather than hire accountants in hopes of teaching them to be strong writers” (Anders 2016). The firm hires an unusually large number of humanities and social sciences majors. If today’s undergraduates are seeking higher education for financial stability, perhaps they ought to reconsider the liberal arts. An analysis by the Association of American Colleges & Universities, a trade group that represents more than 1,350 schools, found that once people reach their peak-earning ages, liberal arts majors earn an average \$66,185 per year – 3% ahead of earnings pace for those with degrees in vocational fields (Anders 2016).

These supporting studies and metrics underscore the need to do better. As Derek Bok, former president of Harvard College, writes in his book *Our Underachieving Colleges*, “More than half of all people in America go to college, and more than a quarter receive a Bachelor’s degree...If colleges miseducate their students, the nation will eventually suffer the consequences. If they can do a better job of helping their students communicate with greater precision and style, think more clearly, analyze more rigorously...society will be much the better for it” (Bok 2006).

Since the publication of *Rethinking Undergraduate Business Education*, the academic trend of infusing business education with liberal arts education has strengthened. For example, a year after its publication, the University of Denver’s Daniels College of Business piloted a required course that taught business history, ethics, social responsibility, sustainability and other

subjects intended to show business in a global context (Korn 2012). At New York University, the Business and Society program requires a set of four courses that place business into a greater societal context (Lavelle 2013). Another source of evidence for this trend is delayed entry into undergraduate business programs until the third academic year, leaving the first two years for a liberal arts foundation, as seen at schools like Emory University and the University of California: Berkeley. This is a recommendation supported by the 1959 Ford Foundation Study, which is a standard of educational quality still supported by business accreditation organizations today (Chew and McInnis-Bowers 2004). However, Colby, et. al. prefer the integration of the liberal arts into business curricula, rather than a separation.

2.2 Defining Creative Thinking

While all aspects of liberal learning have their merits, creative thinking deserves a closer look because of the little agreement over its definition or components – despite the plethora of literature on the topic. One estimate claims that there are more than one hundred analyses on the definition of creativity or creative thinking within the academic realm (Meusburger 2009). BusinessDictionary, a popular online resource for business terminology, defines it as “a way of looking at problems or situations from a fresh perspective that suggests unorthodox solutions (which may look unsettling at first)” (BusinessDictionary 2017). The Collins German Dictionary simply says it is “the ability to create” (Collins 2017).

Notably, Dr. E. Paul Torrance describes it as, “a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and

retesting them; and finally communicating the results" (Torrance 1966). Dr. Torrance is the creator of the Torrance Tests of Creative Thinking, an instrument used internationally to measure creative thinking in children and adults. Given Dr. Torrance's clout in the field and the breadth of his definition, his characterization of creative thinking guides this research.

What is the link between liberal learning and creative thinking? In *Rethinking Undergraduate Business Education*, Colby and her colleagues identify four main components of liberal learning. One of these components is "multiple framing," and it is closest to the concept of creative thinking as defined by Dr. Torrance. Multiple framing is defined as "the ability to work intellectually with fundamentally different, sometimes mutually incompatible, analytical perspectives" (Colby, et al. 2011). Colby, et. al.'s definition of multiple framing and Dr. Torrance's definition of creative thinking share the commonality of acknowledging ambiguity and variance when seeking answers.

For the purposes of this study, the two terms are interchangeable. That is, the study explores liberal learning through the scope of creative thinking, which is the closest cousin to multiple framing – one of the explicit dimensions of liberal learning. Granted, the two ideas are not exactly the same, and there are nuances that remain uncaptured by this shortcut. Still, the esoteric nature of the term "multiple framing" in contrast to the more ubiquitous "creative thinking" makes the case that the gain in feasibility is worth the loss in precision, for the purpose of research.

2.3 Cultivating Creative Thinking in Undergraduate Business Education

As with the liberal arts in general, the benefits of creative thinking are also documented. As an aside, both literature that uses the term “creativity” and literature that uses the term “creative thinking” is referenced to broaden the base of research to draw upon. An IBM study of more than 1,500 senior executives found that creativity is the most valued quality in a leader. According to IBM, creative leaders will invent new business models, utilize disruptive innovation, and are more comfortable with ambiguity (IBM 2010). Of course, creative thinking is also associated with innovation and entrepreneurial spirit, two qualities highly valued in American society. In addition, “creative thinking encourages and values inclusion, as well as inspires effective teamwork” (Galbraith 2003). These factors have, in part, led to the “rise of the creative class,” as Richard Florida of the University of Toronto argues. Drawing on data from the U.S. Census, Florida posits that the creative class is a driving force behind economic prosperity in post-industrial American cities, making them a socially relevant group of individuals. He splits the creative class into two sections, one of which consists of knowledge-based workers, including those in business (Florida 2002).

At the same time, a “myth” pursues that business school students are not creative. For many years, higher education has been accused of stymieing creative thinking, as opposed to fostering it. University of Michigan Ross School of Business professor Jeff DeGraff identifies conflicts of interest between creativity and business school. He argues that business school faculty members generally lack experience with creativity at work to be able to teach it with credibility. Moreover, students are admitted based on standardized tests that do not measure creative thinking adequately, and are graded on an objective criteria or curve that do not capture the nuance of creative thinking well (DeGraff 2015).

Nonetheless, there are plenty of opinions on how to close this gap. DeGraff believes that the “secret” to teaching creativity is simply to surround students with people who are creating (DeGraff 2015). Teresa Amabile, a professor at the Harvard Business School known for her research on creativity, believes giving students free reign is paramount (Amabile 1983). Regardless of whichever method would be most efficacious, most scholars agree that the onus for cultivating creative thinking falls on higher education. The question remains whether undergraduate business schools can and will answer the call.

3. RESEARCH DESIGN

This section describes the development of the research question and hypothesis, and explains the larger research project this study supports.

3.1 The Teagle Project and the Wharton School

In an effort to better understand how to integrate liberal learning into undergraduate business curricula, the Wharton School at the University of Pennsylvania, Franklin and Marshall College, and Bucknell University are engaged in a grant entitled *Redrawing the Map for Liberal Learning in the Undergraduate Business Curriculum: A Heterogeneous Exploration Addressing All Stages of the Student Experience*. The grant is supported by the Teagle Foundation, which aims to “serve as a catalyst for the improvement of teaching and learning in the arts and sciences while addressing issues of financial sustainability and accountability in higher education” (Teagle n.d.). The Center for Opinion Research and Aspen Institute Business and Society Program will also serve as partners on the grant.

Though all three collaborating institutions have very different business education systems, they all hope to enhance their curricula with liberal arts components. Each institution has a commitment to one or more of the following core goals:

1. Reframe and enrich traditional business fields or disciplines
2. Explore new modes of interdisciplinary pedagogy and learning
3. Foster more reflective, intentional, or substantial incorporation of liberal arts courses across the undergraduate experience of students majoring in business
4. Expand the points of entry for liberal arts values and perspectives to span business students’ entire undergraduate experience

The output of the three-year grant will be a toolkit identifying best practices for teaching the liberal arts in a business classroom, to be disseminated to peer institutions [Appendix A].

The lead for the Wharton portion of the grant is Dr. Anne M. Greenhalgh, deputy director of the McNulty Leadership Program. This research project was born out of the Teagle grant, and Dr. Greenhalgh serves as the advisor on it, as this study will work in support of her efforts on the Teagle grant.

The Wharton School at the University of Pennsylvania is a prime candidate to explore the role of liberal learning within undergraduate business education. Wharton is often considered the top undergraduate business program in the United States, but the school also has a history of liberal learning. It was only until 1975 that the social sciences (e.g. political science, sociology) were moved out of Wharton, with the establishment of the School of Arts and Sciences (University Archives 2016). According to Wharton's undergraduate website, the number two reason to come to Wharton is "business and liberal arts" – second only to "a tradition of excellence" (Wharton n.d.). To earn their degree in economics, current Wharton students still must complete seven general education courses – two from the category of Science and Technology, two from the category of Language, Arts, and Culture, two from the category of Social Structures, and one more at the discretion of each student.

Today, Wharton's peer group does not include other undergraduate business schools, but rather, institutions that do not have undergraduate business schools at all. In other words, admitted students who ultimately do not matriculate to Wharton typically select institutions with hefty liberal arts foundations -- such as Columbia, Harvard, or Duke. That is, to keep pace with peers, Wharton must continually consider and evaluate its liberal learning offerings. Considering

the ongoing larger trends in academia, this prompts the question: could there be a revival in interest in the liberal arts at Wharton and beyond?

3.2 Research Question and Hypothesis

For this research project, the question is, “Do undergraduate business schools cultivate creative thinking?; the Wharton curriculum as a case in point.” Again, this focus is on creative thinking because multiple framing, the closest cousin to creative thinking, is one of the four dimensions of liberal learning. Wharton is used as the case in point because of its standing as a leading undergraduate business school in the United States. As for a hypothesis, there is reason to believe that Wharton already cultivates creative thinking, based on anecdotal evidence of student perceptions.

The question and hypothesis may be simple, but the nuance of the findings make the study interesting. For example, if Wharton already cultivates creative thinking, how much does it do so? Do certain academic departments do so more than others? For professors who do aim to teach creative thinking, how do they measure success? These types of insights will add color and depth to the research project.

4. METHODOLOGY

This section explains the specific methodology for the research study.

4.1 Methodology Overview

Undergraduate education involves two distinct parties: faculty and students. Faculty teach; students learn. What results from the interaction between these two groups of stakeholders is education. Thus, to understand creativity in undergraduate business education, it is imperative to gain insights from both perspectives.

From the faculty angle, Wharton course syllabi were first searched to identify courses that aimed to cultivate creative thinking, as defined by the inclusion of the terms “creative,” “creativity,” and/or “creative thinking” in course objectives. From there, faculty who taught those courses were identified and sent email requests for interviews. Simultaneously, undergraduate business students were contacted for interviews, to better understand their take on the same topic. Given the nature of the research topic, most of the research for this project, if not all, is qualitative.

4.2 Combing the Wharton Curriculum

To determine the extent to which Wharton aims to cultivate creative thinking, syllabi from the school’s history of course offerings were examined, since listing course objectives on syllabi is customary in academia. Dr. Greenhalgh’s research assistant Jennie Walsh combed all the undergraduate syllabi available on Spike, an internal Wharton website with academic and professional resources. Ms. Walsh identified course objectives for each course that had an available syllabus and compiled this information in a comprehensive spreadsheet, which was

generously shared with this study. At the time of this study, she documented 177 courses (n=177). For the purpose of this study, a “course” refers to each unique course-professor combination as its own data point. For example, Accounting 102 taught by Professor Victor Defeo and Accounting 102 taught by Professor Christopher Ittner count as two separate courses, because they have the option of disseminating distinct syllabi. Additionally, cross-listed courses are counted as only one data point. For example, International Housing Comparisons taught by Professor Susan Wachter is listed under both Real Estate (REAL) and Business Economics and Public Policy (BEPP) departments, but counted as one course.

After obtaining this overview snapshot of the Wharton course catalogue, course syllabi were more specifically searched for the words “creative thinking,” “creativity,” or “creative.” Of the 177 courses, four courses met that requirement. Those four courses were:

- MGMT 291 / OIDD 291 / LGST 206: Negotiation and Conflict Resolution, taught by Professor Janice Bellace
- MGMT 291 / OIDD 291 / LGST 206: Negotiation and Conflict Resolution, taught by Professor Scott Rosner
- MKTG 277: Marketing Strategy, taught by Professor Thomas Robertson
- MKTG 292: Creativity, taught by Professor Rom Schrift

When the search was broadened to include courses with creative objectives for assignments, rather than for the course as a whole, twenty additional courses could be counted. In total, this is twenty-four courses out of 177 that have some objective of cultivating creative thinking, or 13.56%.

4.3 Identifying Faculty Interview Subjects

The list of twenty-four courses that showed some objective of cultivating creative thinking, whether it was for the course overall or a specific assignment, was used to identify prospective faculty interview subjects. Based on existing relationships, the following faculty were sent email requests to be interviewed:

- Rom Schrift
- Thomas Robertson
- Scott Rosner
- Janice Bellace
- Kevin Werbach
- Nicolas Cornell
- Anne Greenhalgh
- Payal Sharma
- Adrian Tschoegl
- Adam Grant
- Samir Nurmohamed
- Deborah Small
- Richard Shell

Of these prospective participants, six were willing to be interviewed for this study. They were, Professors Nicolas Cornell, Anne Greenhalgh, Payal Sharma, Adrian Tschoegl, Samir Nurmohamed, and Richard Shell. With these six participants, the Legal Studies and Management departments are represented. For reference, there are ten total academic departments at Wharton. Additionally, Dr. Scott Barry Kaufman, of the Psychology department in Penn's College of Arts and Sciences, was contacted for a conversation to obtain background information because of his research interests in creativity.

Faculty who declined to participate did so for various reasons, mostly due to scheduling difficulties. Interestingly, a few faculty members felt they would not be helpful. For example, Professor Kevin Werbach, who teaches Legal Studies 222: Internet Law and Policy and Legal Studies 240: Gamification for Business, wrote back, "I sometime include creativity as a criterion for assignments, but that's just to encourage students to do something original. My efforts to do anything outside traditional pedagogy have been unsuccessful" (Werbach 2017). Similarly,

Professor Deborah Small who teaches Marketing 266: Marketing for Social Impact, wrote, “I don’t know if I have much to say on HOW to be creative. My grading criterion is about encouraging individuals to come up with ideas that are different or unique from what others have said” (Small 2017). It could very well be possible that these professors intend to cultivate creative thinking, without realizing their intent.

4.4 Identifying Student Interview Subjects

Dr. Greenhalgh’s database of current and former students was used to pull potential student interview subjects. Dr. Greenhalgh contacted students from five sections of Management 100: Leadership and Communication in Groups, the course for which she is the head instructor. Of these five sections, three were from Fall 2016 (freshman students) and two from Spring 2017 (upper-level transfer and dual degree students). Students were sent email invitations to participate. In addition, some students were referred to be interview participants. All students who expressed interest in participation were granted an interview. Fifteen total students were interviewed, including single-degree, coordinated dual-degree, and uncoordinated dual-degree students. Male and female students, students of all four class years, and students from five different countries were represented [Appendix F].

4.5 Interview Structure

The interviews took on a semi-structured format, with the faculty interviews lasting no more than an hour and the student interviews lasting no more than forty-five minutes. The interviews took place at a mutually agreed upon time and place, and were recorded and transcribed with participant consent. While subjects were informed of their rights as voluntary participants, the study was classified as exempt by the University of Pennsylvania IRB and therefore did not

require IRB approval [Appendix C]. Questions were asked from the interview guide at the discretion of the interviewer, and interviews often took a trajectory of their own, as subjects spoke freely of their experiences with creative thinking.

5. FINDINGS

This section discusses the findings of the twenty-one interviews: fifteen undergraduate Wharton students and six Wharton professors. The findings are grouped by topic, and ordered per the order of questions in the interview guides.

5.1 Higher Education

5.1.1 The Purpose of Higher Education

The opening question for both student and faculty interviews was, “What do you think is the purpose of higher education?” By and large, most interview participants – both student and faculty – agree one role of higher education is to prepare students for professional life. Skill-development was most frequently cited as a goal of higher education. With the most recently published annual cost of attendance at the University of Pennsylvania to be \$72,584, anyone would admit that these are reasonable questions to ask (Penn n.d.). As Wharton student Zack Varrato says, “Ultimately if I didn't think it was necessary to pay this much money to get a job, I probably wouldn't” (Varrato 2017). Professor and Management Undergraduate Department Chair Adrian Tschoegl believes a college degree serves as a screening device for employers: “If you have a college degree, I’ve got to have one, otherwise the employer will go with you – even though the employer knows that what I’ve learned is irrelevant to the job” (Tschoegl 2017). He references the 1971 seminal Supreme Court case, *Griggs v. Duke Power Co.*, which decided that employers are not allowed to use general aptitude tests to screen job applicants unless the tests are related to the job itself, thereby prompting employers to rely on other screening devices instead. While Penn admittedly receives a reputation of being especially pre-professional, these findings corroborate the larger trend of moving towards measuring higher education as a return on investment.

Of course, it must also be said that there are thousands of higher education institutions in the United States alone, and that no two share the same purpose or purposes. Other purposes of higher education, as shared by faculty mainly, could include students' personal development, religious propagation, or encouraging students to reflect on their values. Students, and only students, also highlight the importance of having a social life. As first-year student Bradley Smith says, "I just want to have fun, go on adventures, go traveling" (Smith 2017).

5.1.2 Thoughts on Liberal Learning

Nearly every interview subject sees the value in liberal learning, in terms of helping students develop their whole selves, for their own benefit and society's. As Bradley Smith says, "People are multifaceted. People don't just live their whole lives doing one thing" (Smith 2017). Even Zack Varrato, who feels the primary purpose of higher education is to secure a job, believes components of a liberal arts education enrich vocational education, "Business by itself isn't anything. At the base, business is just people and relationships, money passing around. So what business are you running? If you're running a healthcare business, you need to know about healthcare" (Varrato 2017).

Since 40% of the current Wharton degree requirements must come from outside of the business school, Wharton undergraduates are exposed to courses in the College of Arts and Sciences. For some students, this is not a requirement to trudge through, but a source of intellectual stimulation and joy. Alexandra Lorenzotti, who is a student of the Huntsman Program of International Studies and Business, expresses interest in her language of study, German: "In terms of knowledge, it is really interesting that I can be studying philosophy in German. I am reading Kant in his original words!" (Lorenzotti 2017). Rehan Aytron, who is accustomed to the narrower vocational curricula in his native United Arab Emirates, originally thought his required

liberal arts courses were “alien” and “superfluous.” However, as a current junior, he has since come around to appreciating what they have done to broaden his understanding of topics he originally had no background in (Ayrton 2017). Junior Eric Helfgott also appreciates the liberal arts requirements because he cannot afford to take electives as a coordinated dual-degree student. He believes that if the liberal arts requirements were not flexed in with his already demanding degrees, he would not be able to do them on his own, unless they were taken pass/fail as he is currently doing with a Political Science course (Helfgott 2017).

To a certain degree, international students interviewed chose to attend Penn, or at least an American institution, for the opportunities for liberal learning. That is, they believe that the opportunities for liberal learning on an American campus actually enhance their college experience. In Australia, which freshman Philip Chen calls home, college students select their majors immediately upon matriculation, which prompted him to look to Penn for what he calls “the best of both worlds” – liberal arts education and pre-professional training (Chen 2017). First-year student Annissa Ramadhanti of Indonesia saw her high school peers seeking education in the United Kingdom, where students only take classes related to their majors, but she forwent that route: “I didn't want that kind of education because I thought it was too narrow, and in case my interests change, then it is very difficult to be flexible” (Ramadhanti 2017).

While they were certainly in the minority, some participants do not see the value of liberal learning being intertwined with teaching for the professions. Sophomore Dylan Denman feels that by the time students have entered college, liberal arts become less relevant and vocational training becomes more appropriate for this stage in life (Denman 2017). Professor Adrian Tschoegl, who considers higher education to be a screening device for employers, says, “Liberal learning is great, but it's the sort of thing people should be doing at night when they have a real job” (Tschoegl 2017).

5.2 Creative Thinking

5.2.1 Defining Creative Thinking

Academic scholars have no one definition of creative thinking. It logically follows that all interview subjects also have varying definitions of creative thinking. Often, the saying “thinking outside the box” is referenced. Furthermore, most acknowledge a level of ambiguity that must exist. When Professor Payal Sharma, who teaches Management 101: Introduction to Management, designs exercises to imbue creative thinking in her students, she believes it is important to give a starting prompt and a desired end goal, but leave the processes in the middle up to students to figure out. Some constraints or guidelines prevent students from being overwhelmed, but a healthy dose of ambiguity is vital (Sharma 2017).

Another common thread across the various definitions is the notion of making connections. Professor Adrian Tschoegl calls creative thinking “putting disparate things together – seeing connections” (Tschoegl 2017). Legal Studies Professor Richard Shell holds a similar definition: “a combination of things in disparate parts of your brain” (Shell 2017). Interestingly, the late Steve Jobs, the former Apple CEO lauded for his innovative contributions to the technology industry, shared this definition of creativity. He said once, “Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something...That's because they were able to connect experiences they've had and synthesize new things” (Wolf 1996).

Finally, another recurring theme is application of concepts learned in the classroom to real world problems. Sophomore Dylan Denman recalls a question his Finance 101: Monetary Economics and Global Economy professor asked him: How would President Trump’s protectionist policies affect his recommended interest rate for Cleveland, Ohio? Dylan then had to realize that protectionist policies would hurt exports, and given Cleveland’s manufacturing

industry, recommended keeping rates the same. He says of the experience, “[Creative thinking] is the act of applying what we learned in class, creatively fitting something like Trump’s protectionist policies into a model that it didn’t necessarily fit into before” (Denman 2017). Students and professors alike see that after a certain point, students will not be able to rely on textbooks or course materials anymore to solve the problems they need to solve. Therefore, they see creative thinking as a way of anticipating and dissecting problems, then solving them by drawing on prior learnings. Interestingly, Anne Colby would likely find this approach more in line with practical reasoning, another of the four dimensions of liberal learning. Practical reasoning represents the ability to draw on knowledge and intellectual skills to engage concretely with the world, often to decide upon the best course of action in any given situation (Colby, et al. 2011).

5.2.2 Cultivating Creative Thinking

As the subject of this study is undergraduate business education, it is important to first establish whether anything can be done about cultivating creative thinking in undergraduate business schools. The question from the interview guide “Can creative thinking even be taught?” received mixed responses. Overall, most believe that something can be done to improve creative thinking skills in others, but interviewees hesitate to use the word “taught,” and instead prefer softer words like “elicited” or “developed.” Dr. Scott Barry Kaufman, who studies creativity, thinks a better term is “improved” (Kaufman 2017). Freshman Akshay Malhotra says, “I think creative thinking isn’t taught through a textbook necessarily, but there are ways to develop it. I wouldn’t say you can learn it, but you can definitely develop it. The distinction between that is that creative thinking can be stimulated through activities that promote such things” (Malhotra 2017). Of all interviewees, Management Professor Samir Nurmohamed most categorically believes that creativity can be taught and learned, even if there are natural differences in predisposition. He

likens the notion that creativity cannot be taught to the myth that leadership cannot be taught. After all, he says, if creativity could not be learned, business incubators would not exist (Nurmohamed 2017).

Professor Richard Shell does not believe creative thinking can be taught, but rather, people can only help others think creatively by giving them lots of inputs and asking them to make connections, thereby maximizing the chances that they will have creative thoughts (Shell 2017). Professor Adrian Tschoegl also believes that creative thinking is the process of putting ideas together, but takes a stronger stance than Professor Shell. Professor Tschoegl does not think creative thinking can be taught, but rather believes his role as an educator is to provide knowledge and hope that students are struck by the “luck” needed to make connections between those ideas. Referencing the New Testament’s Parable of the Sower, Professor Tschoegl believes that he merely throws seeds: “Sometimes they land on fallow land. Sometimes they land on rocks” (Tschoegl 2017).

Of course, most interviewees acknowledge that some people are more inclined to develop creative thinking than others. Professor Shell posits that genetics or biology play a role in determining who has more potential for creative thinking, suggesting that creative thinking is likely related to openness, one of the Big 5 personality traits (Shell 2017). His thoughts are corroborated by Dr. Scott Barry Kaufman who says, “At the very least, research has shown that creative people do tend to have a greater inclination toward nonconformity, unconventionality, independence, openness to experience, ego strength, risk taking, and even mild forms of psychopathology” (Kaufman 2017).

5.2.3 Benefits for Society

On the whole, interviewees see the benefits of cultivating creative thinking, even if they believe it cannot exactly be taught. They see these benefits specifically in undergraduate business schools. They see the role of creative thinking in moving society forward. They see its benefits for solving society's most challenging problems, innovating new technical developments in all sorts of industries, and perhaps quite simply, for adding liveliness to the world. Sophomore Dylan Denman says, "If we didn't have creative thinking, everyone would be a robot. Life would be really boring and grey" (Denman 2017). Junior Eric Helfgott agrees with this take theoretically, but finds it idealistic in practice: "There are a ton of people who I guarantee are not creative and not very good problem solvers, and they do very well in life regardless of the amount of creative thinking they have, and that's okay" (Helfgott 2017).

However, the business world especially demands creativity, as the landscape changes every day. When asked what or whom epitomized creative thinking for them, two students respectively responded Pixar and Uber, rather than say, Vincent Van Gogh or William Shakespeare. Disney, which owns Pixar, has a market capitalization of \$180.73 billion as of April 21, 2017 (Walt 2017). Meanwhile, Uber has been valued at \$62.5 billion, making it the most valuable pre-IPO company in Silicon Valley (Hardy 2016). In today's day and age, creative thinking contributes to business success. This should come as no surprise. After all, business in and of itself is a creative endeavor conceived by humankind.

5.2.4 Benefits for the Workforce

Overwhelmingly, the most frequently cited benefit of creative thinking regards the workforce. Again, students consider one purpose of higher education to be preparation for the workforce, so it logically follows that they support fostering creative thinking for future success in

organizational life. Some believe that wielding creative thinking skills would allow employees to more adeptly climb the corporate ladder, especially as developments in technology have rendered certain human resources redundant. While the students interviewed had little to no work experience, one day they would, revealing the need to develop creative thinking skills now. Freshman Victoria Warner sees this phenomenon best embodied in the narrative of her mother's career:

My mom started at the bottom of where she is today and worked her way up by being creative about how she could reinvent her job...She works at Harley-Davidson and is in charge of factory tours. They did a free tour before, but she came up with this "Steel Toe Tour" which is like a paid extensive tour. Just a simple example like that, where she continually progressed by being open and coming up with new things (Warner 2017).

Professor Nicolas Cornell, who is a scholar of philosophy, also credits creativity to his own measurement of success. He says, "I think in my workplace, one of the things is, an enormous part of whether or not I succeed, it's not about the sheer amount of work I put in, but it's about coming up with the good ideas. I suspect that is not just true of me." (Cornell 2017).

When asked if they could name a vocation in which creative thinking would not be required, students struggled to definitively answer. Of course, some accepted there would be certain situations in which creative thinking would not necessarily be positive. Professor Richard Shell brought up the example of an employee running a nuclear power plant during a meltdown, a situation in which following protocols precisely is paramount (Shell 2017). But on the whole, students struggled to recall any profession in which creative thinking could not be employed whatsoever. On some occasions, they began to answer, only to retract their responses and start anew. Freshman Stefanie Williams first considered cashiers, but then realized that cashiers could use creative thinking skills to converse with customers (Williams 2017). Sophomore Dylan

Denman considered plumbers, but then realized plumbers must apply their knowledge in different types of homes (Denman 2017). Professor Adrian Tschoegl, who believes creative thinking is somewhat a result of luck, sees little value in cultivating creative thinking for the workforce. He says, “That’s why God invented consultants” (Tschoegl 2017).

5.2.5 The Moral Implications of Creative Thinking

One unique benefit of cultivating creative thinking, for both society and the workforce, is creative thinking’s ability to encourage moral and ethical behavior, especially in business settings. Quite frankly, the business world and business education do not have glowing reputations, with events such as the Enron scandal, 2008 financial crisis, and most recently, Wells Fargo’s fraudulent practices influencing the minds of the general public.

Junior Eric Helfgott, who hesitates to consider creative thinking one of the “make or break components of the real world,” does indeed see the benefits of it in business settings because of the way creative thinking encourages ethical behavior. He says, “It makes sense that the person in business who might think cut or dry needs the experience of inquisitive thinking” (Helfgott 2017). Professor Nicolas Cornell, who teaches Legal Studies 210: Corporate Responsibility and Ethics, would agree. In his section of the course, Professor Cornell covers topics like whistleblowing, corporate social responsibility, and fraud. Professor Cornell says, “I think [creative thinking] may be important to getting people to be better as more ethical workers, in the sense that a lot of unethical conduct probably stems from people thinking that the options on the table were the only options to them and just going along with that” (Cornell 2017).

5.2.6 The Leadership Pipeline

Generally speaking, students interviewed assume they will enter the workforce immediately after graduation. But what about ten years down the line? Twenty? Thirty? While they will one day become employees, they also accept that they likely will one day become leaders. Considering why she chose to attend Wharton, freshman Maria Curry says, “I can work for people, but at the end of the day, I’d like to run a company or make those decisions” (Curry 2017).

On the flip side, instructors understand the important responsibility they carry, as they help transform students into the next generation of responsible workers and citizens. Especially at a prestigious undergraduate business institution like Wharton, the stakes feel higher as a leadership pipeline from classroom to boardroom seems to exist. Professor Anne Greenhalgh, whose research interests include leadership, says, “We are putting people into positions of power and influence” (Greenhalgh 2017).

The IBM study cited in Section 2 found that creativity is the most valued skill in a leader. Professor Payal Sharma, also of the Management department, explains how creative thinking must be developed during the undergraduate years in preparation:

My husband likes to joke that I’m often educating the future CEO or the future president of a company. Not only is creativity important to students as they become employees and members of a workforce, but these are our future leaders. We know from research that leaders set the tone in an organization, and that they’re role models with their attitudes and their behaviors. So if we can set up creative thinking now in these rising leaders, or somehow encourage these rising leaders to value creativity, that to me suggests downstream implications in a positive way for the culture or the environment that tomorrow’s organizations will have (Sharma 2017).

5.3 Creative Thinking at Wharton

5.3.1 *The Wharton Undergraduate Curriculum*

When asked whether participants believe Wharton values creative thinking, overwhelmingly, the consensus was that regardless of whether it values creative thinking, Wharton could value it more. Interestingly, the four upperclassmen interviewed see little evidence that Wharton values creative thinking, though they acknowledge that is partially due to their choice of specialization. Because interview subjects do not completely agree on the definition of creative thinking, it would also logically follow that interview subjects also do not agree on whether Wharton values it, especially since there is no singular Wharton experience. However, there were certain components of Wharton, either tangible or intangible, that stood out when participants spoke about their experiences with creative thinking at Wharton.

Generally, students find the breadth of opportunities available at Wharton and Penn to be conducive to creative thinking. Faculty also express appreciation for the sheer number of intellectual resources available at Penn. A few students reference the benefits of the Wharton core curriculum, nine required fundamental courses from different business disciplines. They see the core requirements as a way of “forced” exploration and broadening perspectives – concepts they associate with creative thinking. Beyond that, freshman Zack Varrato, who freelances as a graphic designer, is looking forward to taking upper-level elective courses: “There are definitely Wharton classes for creative minded people” (Varrato 2017). He hopes to take an advertising class, perhaps Marketing 224: Advertising Management, which the study has identified as containing an overt objective of cultivating creative thinking.

Students also appreciate the practical applicability of the Wharton education, which relates back to both the more vocational purpose of higher education today and many students’ own conceptions of what it means to be creative. Student Philip Chen appreciates Wharton’s use of

simulations and real-world client engagements to highlight the applicability of classroom learnings (Chen 2017). Alexandra Lorenzotti hopes to take Professor Jeremy Siegel's coveted honors section of Finance 101. The appeal for her, is that Professor Siegel spends time each class discussing market happenings and current events, so that students can put course concepts in a context relevant to them (Lorenzotti 2017).

Where Wharton could improve in cultivating creative thinking, it appears, is offering more flexibility in the evaluation of student work. To illustrate this point, Dylan Denman identifies the core course Marketing 101 as a case in point. In weekly recitations, students analyze a case study and discuss with their classmates in an environment that has "no real stakes." However, midterm and final examinations, which determine a large portion of students' grades, are "regurgitating class concepts." He takes this in contrast with Melinda deLisle's Legal Studies 101 course, which he believes effectively fosters creative thinking. In this course, the final exam is entirely interpretive and application-based. Professor deLisle poses scenarios, such as a customer contracting a catering company, and asks students to evaluate what these scenarios mean in the context of relevant legal claims. Denman thinks this approach is not only a better way of absorbing knowledge, but contextualizing it as well (Denman 2017). Senior Andrea Pascual, who does not believe Wharton particularly values creative thinking, wishes that professors would encourage students to complete assignments related to their personal interests, which she feels would motivate students to do their most creative work (Pascual 2017).

From the faculty perspective, professors also believe they experience a great deal of autonomy at the Wharton School, thereby giving them the creative freedom to carry out their research and teaching. Professor Richard Shell, who teaches the more unconventional course Literature of Success out of the Legal Studies Department, considers Wharton liberal enough to allow him to teach what he would like to teach. By contrast, he does not feel the English

department would permit his course, as he guesses they would demand a greater emphasis on critical analysis of texts, rather than on personal development (Shell 2017). Professor Payal Sharma, who is a visiting professor to Wharton, remembers she was struck by the “culture of yes” at this school when she first arrived. She has asked for some “odd” things of the Management department, yet the answer has “almost always not been no.” She feels she has the creative liberty to incorporate experiential exercises such as simulations and opportunities for reflection into her Management 101: Introduction to Management course, despite it being a mandated course for Wharton undergraduates (Sharma 2017).

5.3.2 Management 100: Leadership and Communication in Groups

More specifically, each of the ten first-year students interviewed for this study made reference to Management 100: Leadership and Communication in Groups with regards to cultivating creative thinking. In total, thirteen of fifteen total student interviewees mentioned Management 100. In this required first-year course, students are placed in heterogeneous teams of ten to learn about teamwork, by way of conducting a service project for a local Philadelphia nonprofit. In the syllabus for this course, head instructor Professor Anne Greenhalgh writes that the best projects are creative. She instructs students, “Structure the way you execute your project but leave room for creativity.” Professor Greenhalgh believes including this objective challenges students to come up with better solutions, which enriches the experience for both student teams and their nonprofit clients.

What is it, about Management 100, that makes it so creative that nearly every single student interview participant mentioned it? Of course, it is mandatory course, but so are Finance 100, Statistics 101, and Accounting 102. Perhaps there is a cognitive salience to it, as freshman have not taken many Wharton courses yet. But even sophomore Dylan Denman purposefully tries to

avoid citing Management 100 as the hallmark of Wharton, despite being a teaching assistant for the course. He says, “I feel like that’s the stereotypical I-thought-creatively-to-solve-problems class” (Denman 2017).

Again, why Management 100? For freshman Stefanie Williams, it was a client who had high expectations. For their Management 100 project, her team was tasked with planning a Thanksgiving dinner for senior citizens in Philadelphia, on behalf of the nonprofit Little Brothers: Friends of the Elderly – a longtime client of the course. In order for her team to stand out and satisfy their client, the team had to think of ways to execute the dinner differently than teams from past years (Williams). For other students, a client with no expectations gave way to creative thinking. Bradley Smith, whose team aimed to raise awareness of Type I Juvenile Diabetes, says, “[Our client] Dan Fine said, ‘You can do whatever you want.’ Allowing us to have freedom to think of our project on our own, rather than having strict guidelines, was extremely important in allowing us to run free.” After considering ice skating events and fundraisers, the team ultimately settled on throwing free smoothie pop-up events to raise awareness for the client’s organization. The events were a major success and contributed to a high performance evaluation for the team (Smith 2017).

While the class is being revamped for the upcoming academic year into a four-year modular journey, it remains unclear whether the creative components of the original course will be preserved moving forward.

5.3.3 The Legal Studies and Business Ethics Department

In addition to Management 100, other commonly mentioned courses were Legal Studies 210: Corporate Responsibility and Ethics and Legal Studies 101: Introduction to Law and Legal Process. The way these courses are designed vary from professor to professor—unlike Management 100, which shares the same syllabus, assignments, etc, across sections of the course. In these Legal Studies courses, some professors employ debates to evaluate students, others use exams or papers. Despite this variety though, eight of fifteen interview subjects made mention to one of these Legal Studies courses, which can be used to fulfill Wharton’s Societal Environment requirement.

In freshman Zack Varrato’s Legal Studies 210 course with Professor Thomas Donaldson, the final exam was a ten-page essay about each student’s personal definition of business ethics (Varrato 2017). Hunter Cook, a senior three years older than Zack, also loved Legal Studies 210 with Professor Donaldson because of the open-ended nature of the essays (Cook 2017). Even junior Eric Helfgott, who calls his Legal Studies 210 class, “my least favorite class at Wharton,” still acknowledges the possibility to have opportunities for creative thinking in the course due to the discussions with classmates who have different views of ethics (Helfgott 2017). In Legal Studies 210, there are no “right” answers, giving way to various perspectives that can be, at times, incompatible. The premise of Legal Studies 210 is similar to the definition of multiple framing, which again, entails working with fundamentally different analytical perspectives.

Meanwhile, like Dylan Denman’s earlier sentiments about his Legal Studies 101 course with Melinda deLisle, Annissa Ramadhanti thinks Legal Studies 101 with Professor Vincent Buccola provides many opportunities for creative thinking, because of the way he poses scenarios and asks students to determine if they are lawful – prompting students to think about “alternate scenarios” and “unconventional” interpretations for the law (Ramadhanti 2017). Rehan Ayrton, a

junior two years older than Annissa, also recalls this course taught by Professor Buccola and considers it one of the best courses he has taken at Penn. Finally, for Victoria Warner, the comfort that she would not be evaluated on whether she determined a situation to be lawful or unlawful, but rather on how she interpreted and applied the resources given to her, allows her to be creative in Professor Gwendolyn Gordon's section of Legal Studies 101 (Warner 2017). Overall, students respond well to the interpretive nature of Legal Studies 101, which enables them to apply and contextualize their knowledge. In other words, they can place course concepts into multiple frames.

At the minimum, Wharton students must take one of these two identified Legal Studies courses to graduate. Beyond that one class, they retain the prerogative to never take a Legal Studies class again.

5.3.4 Looking Outside of Wharton

Despite the prominence of Management 100, Legal Studies 210, and Legal Studies 101, some Wharton students look outside of Huntsman Hall for opportunities to develop their creative thinking and liberal learning skills. Many of the interviewees hold more than one academic interest. Some are enrolled in coordinated dual-degree programs, such as the Jerome Fisher Program in Management and Technology or the Huntsman Program in International Studies and Business. Others are pursuing minors in French, Psychology, or the History and Sociology of Science. Freshman Victoria Warner recently decided to pursue a minor in Fine Arts with a focus on graphic design, in response to the "rigidity" of her Wharton course of study (Warner 2017).

But nobody exemplifies the call of intellectual curiosity better than Nathan Chiu. Before even completing his first year at Penn and Wharton, he knows he will be pursuing an uncoordinated dual degree between Wharton and the College of Arts and Sciences. At Penn,

uncoordinated dual degrees are notoriously onerous. But for Nathan, the extra academic rigor is worthwhile. During his first semester at Penn, he came upon a list of new courses offered, and on this list was English 109: Literature and Business. He felt the course was marginally related to his primary course of study in Wharton and registered on a whim. Starting next academic year, he will begin completing requirements towards his B.A. in English in the School of Arts and Sciences (Chiu 2017).

Professors also note the benefits of study abroad or international programs for cultivating creative thinking in students. At present, 25% of Wharton students study abroad (Wharton n.d.). Professor Samir Nurmohamed, who is currently conducting research on different cultures that customarily eat insects, says:

There's research by Adam Galinsky, Will Maddux, and others that talks about traveling internationally and how people who have lived in other countries are more creative from these experiences. You can make the argument, okay well right now, we have travel abroad. Maybe we make this a required thing, where everyone has to do it. Setting up that Wharton San Francisco campus is one way of doing it, of putting it in the same country. Maybe [Wharton] wants to think about having lots of different campuses around the world to field more of those experiences. But will that improve creativity tomorrow? I don't know, right? But the hope is, by putting these students in these different contexts, that they're going to in the long term develop these capabilities and creative thinking (Nurmohamed 2017).

5.4 Methodologies for Cultivating Creative Thinking

5.4.1 *Experiential Learning*

If undergraduate business schools should cultivate creative thinking in students, then the next step is determining how. Some professors highlight the importance of experiential learning, which could be one explanation for why Management 100 is so frequently cited among students as a course that cultivates creative thinking. Experiential learning is defined by higher education thought leader John Dewey as simply “learning by doing,” while the Association to Advance Collegiate Schools of Business defines it more narrowly as, “a business curriculum-related endeavor which is interactive (other than between teacher and pupil) and is characterized by variability and uncertainty” (Gentry 1990). By that definition, Management 100 projects, which vary in experience because of clients, project objectives, team member work styles, et cetera, certainly fit the bill.

Professor Payal Sharma believes that experiential learning is the crux of developing these skills. She explains the most popular exercise in her Management 101 course:

We do an exercise in my semester of [Management] 101 called “The Island of Deidre.”

The way we do this is, students are split randomly into either a company team or an island team. The company has to go outside and build a model boat out of paper using instructions that are provided. While the company team is outside, the island team is inside the classroom revisiting a handout that they’re given which talks about cultural norms. One of the norms that ends up being the funniest is, in Deidre, no means yes and yes means no. Each company team comes back into the room and meets their islanders. The company team’s task is to try to train the islanders without using the instructions they were given to build boats (Sharma 2017).

While students often express their frustration at this exercise, they often tell Professor Sharma how much they learned about testing assumptions and coming up with creative solutions to convey understanding. Professor Samir Nurmohamed also agrees that experiential learning could play a role in cultivating creative thinking, though it does not necessarily have to be as active as a simulation. To him, it could be as simple as taking students on a fieldtrip to visit IDEO, which is a consulting firm that would be of interest to business school students, but specializes in design and innovation (Nurmohamed 2017).

5.4.2 Group Projects

Another methodology considered is group projects, a bastion in business education. Some believe group projects are conducive to creative thinking by virtue of contagion. Student Annissa Ramadhanti believes group endeavors are automatically more creative than individual ones because people with different interests can bring more diverse ideas to the table (Ramadhanti 2017). Professor Payal Sharma would add, “Teams research would suggest we’re more creative when we’re in a group because we might all bounce ideas off each other. You might suggest something that I hadn’t thought of, then I build on that.” It should be noted; where Professor Sharma explicitly asks for creativity in her Management 101 syllabus is under the prompt for the course’s group presentation (Sharma 2017). For Annissa and Professor Sharma, teamwork means the whole is greater than the sum of the parts, resulting in a more creative output.

Others take a more nuanced position. Professor Nicolas Cornell, whose courses include no group endeavors, says, “I could see situations where it would be conducive to creativity, but I am skeptical. I suspect that in the most common group dynamic, there is going to be a tendency to converge towards norms. The dynamic is going to be outlier views will be suppressed for what the majority of the group thinks” (Cornell 2017). Professor Anne Greenhalgh, who exclusively

teaches Management 100: Leadership and Communication in Groups, also sees the potential pitfall of groupthink, but believes avoiding this pitfall stems from hospitable group dynamics. She believes that, in addition to carving out time for individual reflection and ideation, group members must also strive to create an evenhanded and welcoming environment where individuals feel they are able to share those personal ideas (Greenhalgh 2017). All in all, the consensus on group work remains inconclusive, but there appears to be potential for creative thinking in groups.

5.4.3 Raising the Bar

“Generally speaking, creative thinking is hard.”

So says Professor Nicolas Cornell, which is why he believes that criticism is necessary for fostering creative thinking. With a Ph.D. in philosophy and a J.D. from Harvard, Professor Cornell believes that one of the contributions he can make as an educator is to teach students to craft creative, original arguments. For that to happen, he feels students must go through an iterative process of trial and error when evaluating their ideas. He says, “In one sense, criticism is an effective method for creative thinking. If you tell the student, no matter what, they’re doing a good job, they may not be forced to do something creative, so making it hard [will spur creative thinking]” (Cornell 2017).

Professor Richard Shell also encourages students to be creative, by having no expectations at all, which forces students to again, evaluate the merits of their thoughts independent of what has been done in the past. The final paper in his Literature of Success class requires students to write about their personal theory of success, which none of them have conceived prior to taking the course. He considers the prompt impossible. He says, “Smart students these days are often taught very early and repeatedly how to satisfy expectations. The problems I have to give people are ones that they are not really good at solving, that they haven’t really been trained to do, so that they

can't succeed by fulfilling my expectations" (Shell 2017). For Professor Shell's class, every student leaves having had a creative thought, because they must create in order to write this final paper.

5.4.4 The Problem of Grade Myopia

Though professors who believe creative thinking could be encouraged in students came up with a multitude of methodologies for doing so, that does not mean those methodologies come without challenges. In line with Professor Shell's diagnosis, high-achieving students today are accustomed to a particular formula for success and hesitate to veer from it, especially at an academically rigorous school like Wharton. Student Philip Chen, who has not even finished his first year at Wharton, already believes this: "Creativity means taking a risk and people aren't willing to take that if it affects their grade, GPA, or whatever" (Chen 2017). His classmate Alexandra Lorenzotti agrees that the rigor of Wharton classes discourages students from further exploration. She recalls a recent exam in her introductory Operations and Information Decisions course that many of her classmates did poorly on. She claims that the disappointing results of the exam have discouraged people from further pursuing classes in the department. She says, "You may actually really enjoy something, but you can't follow it because you won't do well. At the end of the day, GPA does matter" (Lorenzotti 2017). From a student perspective, it seems that the pressure to earn good grades inhibits the freedom to think creatively.

This emphasis on grades supports the sentiments earlier made by students who believe creative liberty or room for interpretation should be factored into the evaluation of student work. Professor Cornell is not convinced this is truly what students would like, since he believes true creative thought is difficult to come by. He says, "Students can find it frustrated to be told, 'You didn't do anything wrong. You just weren't good enough.'" (Cornell 2017).

Professor Sharma underscores the importance of evaluating students on objective measures, especially in a class like hers, which enrolls 350 students a semester. However, she also agrees that students' drive to receive good grades can get in the way of creative thinking. She says, "I don't have the solution right now, but I feel like as a system, as a society, we train our students to not be as vested in being creative and to instead, think more about their grades. I feel like the school has an obligation to address that." At the same time, she believes the administration has been responsive and she co-directs the Penn Program for Flourishing with Dr. Scott Barry Kaufman, which is a seminar series intended to help Penn students become healthier in mind and body by exploring themes like creativity, meaning, and achievement (Sharma 2017). She remains hopeful about the opportunities for cultivating creative thinking at Wharton.

5.5 The Future of Wharton

It is an exciting time to be a Wharton student. As the public reconsiders the value of a college education, students at the school are poised to take full advantage of the pre-professional opportunities Wharton is known for. At the same time, Wharton claims this motto: "Business and More." The "more" refers to the equally valuable liberal learning that Wharton students are privy to, as students at the University of Pennsylvania. New developments in the curriculum suggest administrators also increasingly see the merits of infusing liberal arts components into business education. Beginning next academic year, the Wharton undergraduate curriculum will be redesigned after undergoing extensive curriculum review by a committee of faculty, students, and other stakeholders. The changes will be rolled out starting in the fall of 2017 and be fully implemented within five years (Rosenkopf 2016).

Previously, a total seven credit units in general education were mandated— two relating to Science and Technology, two relating to Language, Arts and Culture, two relating to Social

Structures, and one additional credit from any of the three categories. Next year, while the general education requirement will be lowered to six credit units, students will only need to take one from each of the three categories, which have since been renamed. Students may fill the remaining three credits with courses from any of the three categories. Moreover, the number of unrestricted electives will be increased. These changes to the general requirements for Wharton students have been made to “increase flexibility to balance breadth and depth in the liberal arts and business,” according to Wharton Undergraduate Division Vice Dean Lori Rosenkopf (Rosenkopf 2016).

Senior Hunter Cook is an example of someone who would have benefitted from these changes. She appreciates the Wharton general education requirements because she only pursued a minor in anthropology after taking an anthropology course to fulfill her Social Structures requirement. Yet Hunter says she did not love having to take a Science and Technology course, as it created an “additional burden” on her four-year academic plan (Cook 2017). This new flexibility in the general education requirements has potential to encourage more students to act like Hunter, or Nathan Chiu, who began another degree in the School of Arts and Sciences after being inspired by an English class, or Victoria Warner, who just needed to do something different, so she picked up a minor in fine arts.

More specifically, opportunities to cultivate creative thinking also exist in this redesigned Wharton curriculum. A new requirement in “Technology, Innovation, and Analytics” will be introduced, and the Legal Studies classes that interview subjects appreciate so much have been moved to the core curriculum. The curriculum redesign suggests a shift in both the Wharton curriculum and culture. It would appear that Wharton is moving towards a greater focus on liberal learning in its undergraduate business education. Once again, it is an exciting time to be a Wharton student.

6. CLOSING REMARKS

College campuses have long been celebrated as foci of intellectual stimulation and societal change. In other words, higher education carries unique potential to shape society by bringing up the next generation of citizens. Especially at a prominent institution like the Wharton School at the University of Pennsylvania, instructors are granted the great responsibility of educating tomorrow's leaders.

This research study arrives at the following conclusions:

- **Students and faculty generally believe creative thinking should be cultivated in undergraduate business settings, but they also believe Wharton could value it more.**

They believe creative thinking will further society and benefit both individuals and organizations. Moreover, as higher education increasingly leans more vocational, students expect skill-building out of their educations. That is, the workforce and society demand these creative thinking skills, so students do too. It is on institutions like Penn and Wharton to deliver.

- **Creative thinking is difficult, but there are ways to cultivate it in people.**

As one student interviewee shared, “You creatively think about where you are going to lunch tomorrow.” If creative thinking is indeed a skill worthy of being gained and trained, then why stop at deciding where to eat? There are many methodologies schools can employ to make students a little bit more creative. They can implement experiential learning to train students to solve nebulous problems. They can test students' assumptions and critique ideas. They can expose them to creative works while hoping for contagion.

- **Wharton already does these things. It just needs to realize it so they can do more.**

13.56% of all documented Wharton courses aim to cultivate creative thinking in one way or another. There is evidence that Wharton values creative thinking to some extent, though whether that is too little or too much is up for debate. The professors who declined to be interviewed for this study claimed they did not intend to foster creative thinking in their courses. Ironically, when explaining their reasoning, they detailed definitions of creative thinking that some interview subjects shared! Of her own research on liberal learning in undergraduate business schools, Professor Anne Greenhalgh says, “I aim to make the implicit explicit.” This study finds, at Wharton, attempts to cultivate creative thinking exist, but they are not always realized.

All in all, higher education institutions are charged with helping students discover and refine their potential as citizens, both in and out of the workforce. Granted, this is no easy task. While students reasonably expect vocational training in their college experiences, institutions would be remiss to omit cultivating creative thinking as part of their curricular objectives. As one professor described, creative thinking is a 21st century survival skill. Prioritizing creative thinking now in undergraduate business students suggests downstream implications in the future, when students become managers and influencers. Simply said, today’s business landscape demands creative leaders. If business schools truly believe that the market must supply what it demands in order to reach equilibrium, then it is time to get to work.

7. APPENDIX

Appendix A: Teagle Foundation Grant, selected portions

*Redrawing the Map for Liberal Learning in the Undergraduate Business
Curriculum: A Heterogeneous Exploration Addressing All Stages of the
Student Experience*

Franklin & Marshall College, Bucknell University, University of Pennsylvania

Franklin & Marshall College, Bucknell University, and the Wharton School of the University of Pennsylvania will enhance their undergraduate business, management, and leadership curricula with a stronger representation of liberal arts content, skills, and pedagogy. Project collaborators—each offering a distinct organizational approach to undergraduate business education—will incorporate relevant liberal arts subject matter content, core liberal arts skills (e.g., listening, critical thinking, reading, writing, speaking, quantitation), and applicable liberal arts pedagogy (e.g., the use of narrative) into existing or new business education courses on each campus. Ultimately, we will create and disseminate a “toolkit” for use by faculty at institutions representing the continuum of higher education who aim to enhance the impact of liberal arts learning across undergraduate business curricula.

To accomplish the proposed goals of this initiative involving our three collaborating educational institutions, the Center for Opinion Research (COR; impartial professional evaluator), and the Aspen Institute Business and Society Program (Aspen BSP; dissemination partner), we request a \$280,000 grant from the Teagle Foundation. We will allocate the grant dollars as follows: Franklin & Marshall – \$110,000, Bucknell – \$100,000, and the Wharton School of the University of Pennsylvania – \$50,000. Wharton's slightly lower allocation reflects the more targeted nature of its institutional efforts; Franklin & Marshall's slightly higher allocation reflects its coordinating role in the larger, collaborative initiative. We also will allocate \$20,000 to COR for project assessment via developmental evaluation. Using its own funding from the Teagle Foundation, the Aspen BSP will assist with dissemination activities. The collaborating schools also will contribute significant matching dollars and in-kind contributions to advance this work, including a “contingent” investment by an external individual donor to F&M.

Background and Context

In its recent BELL (Business, Entrepreneurship, and Liberal Learning) study¹, the Carnegie Foundation identified a crucial feature of much of business education:

Typically, students are asked to learn and apply standard business concepts without considering their origins and broader significance. When concepts are taught in this way, students tend to see them as corresponding to some objective reality instead of tools created by human beings. This problem is exacerbated when individuals remain embedded in a single conceptual frame over an extended period of time (as the dominance of the efficient market model in business almost ensures), coming to treat the model as real even if they are aware at some level that it is not (p.75).

Such a blinkered approach to the study of business deprives students of exposure to the broader social, cultural, and ethical dimensions of their professional choices and relationships. In doing so, this approach undermines students' potential for effective leadership and responsible decision-making, because effective leadership requires not simply manipulation, however skillfully, of an abstract conceptual schema, but a deeper understanding of the more complex and nuanced world

any single conceptual schema can only partially illuminate. Further, responsible decision-making in professional practice calls for an awareness of the multiple potential frames for business choices and the ability to couple market considerations with a broader range of values.

Franklin & Marshall, Bucknell, and the Wharton School share a commitment to explore, together, ways of amplifying the focus on liberal arts content, skills, and pedagogy in the business education of their undergraduate students. Each institution will incorporate liberal arts content and enhance liberal learning through curricular or course revisions as appropriate to each school's institutional context. For the purposes of the proposed initiative, "liberal learning" comprises four critical dimensions: analytical thinking, multiple framing, reflective exploration of meaning, and practical reasoning.

The efforts of our heterogeneous collaboration—an interdisciplinary department within a classic liberal arts college, a pre-professional management program on a liberal arts campus, and a prestigious business program within an Ivy League research institution—will exemplify how to combine liberal arts content, skills, and pedagogy with business education across all levels of the undergraduate curriculum and in a variety of institutional contexts. Our project will provide useful examples and innovations—a "toolkit" of sorts—to business education programs housed within a rich array of institutional contexts.

Purpose, Goals, and Approach

The Collaboration

Purpose and Goals: Informing each institution's distinct approach outlined below is a commitment to one or more of the following core goals: (1) reframe and enrich traditional business fields or disciplines; (2) explore new modes of interdisciplinary pedagogy and learning; (3) foster more reflective, intentional, or substantial incorporation of liberal arts courses across the undergraduate experience of students majoring in business; and (4) expand the points of entry for liberal arts values and perspectives to span business students' entire undergraduate experience. The different partners' individual projects address these core goals to varying degrees; however, the collaborative initiative as a whole will address each of them to a measurable degree.

Approach: Each institution will conduct activities as appropriate to its needs, but the projects will generally develop according to the following plan. In Year 1 of the project, we will focus on faculty development and laying the groundwork for curricular and course enhancement. In Year 2, we will implement the curricular work via pilot projects with appropriate developmental evaluation. Year 3 will involve refining the curricular enhancements and applying them in additional courses or settings when feasible, exploring the feasibility of sharing course features or modules among collaborating institutions, conducting continued developmental and summative evaluation, and disseminating results.

Upon completion of the grant period, we will create and disseminate a broadly applicable "toolkit" for use by faculty at institutions representing the continuum of higher education who share our commitment to enhance the impact of liberal arts learning across the undergraduate business curricula. We will partner with F&M's Center for Opinion Research—which is housed at Franklin & Marshall College but has a national reputation as a third-party evaluator—for project evaluation and assessment and with the Aspen Institute for Business in Society Program for dissemination. The specific approaches proposed by each partner are detailed below.

The Wharton School at the University of Pennsylvania

Purpose: While engaged in a comprehensive re---assessment of its undergraduate business curriculum, the Wharton School is eager to leverage this grant---catalyzed effort to understand how much of the current undergraduate curriculum incorporates liberal learning at various stages of the student experience. Wharton sees real opportunity to make explicit the tacit use of liberal learning, liberal arts pedagogy (particularly, the use of narrative), and liberal arts content in upper---level courses.

Goals: The first goal of Wharton's initiative is to make explicit the range of courses throughout the curriculum that already incorporate the principles of liberal learning. For example, WH 398: Senior Capstone is an experiential, simulation-based course wherein students apply their business knowledge to solve real-time business decisions. Participants formulate and execute business strategy within a complex business ecosystem comprising eight student teams or “firms”. By the end of the course, students have applied business knowledge in a densely intricate and complex simulation environment; navigated the interwoven challenges of strategy development, business execution and team dynamics; and enhanced communication and teamwork skills through group decision making. The Capstone Course is in the company of a range of courses from first to senior year that have the potential to cultivate liberal learning. Clearly identifying this set of courses is a foundational first step.

The second goal is to make explicit the liberal arts pedagogy embedded in Wharton courses. One illustration is MGMT 100: Leadership and Communication in Groups. MGMT 100 is currently the foundation leadership, teamwork, and communication course taken by all incoming undergraduates. The objectives of the course are to strengthen each student’s ability to exercise leadership through service, to speak and write persuasively, and to work collaboratively with a diverse group of individuals. Eleven sections of approximately 60 students run annually (9 for incoming freshmen in the fall and 2 for new transfer and dual degree students in the spring). The hallmark of the course is experiential learning. Moreover, status reports—one of the central assignments in the course—provide a particular opportunity to make explicit the ways in which the assignment and, by extension, the course cultivate the four dimensions of liberal learning highlighted above.

The course also makes extensive use of narrative. For example, one assignment asks teams of students to write a case study about a significant moment in the life of the team. Teams come to appreciate that they are writing what William Labov (1972)⁵ would call an “incomplete natural narrative,” open to analysis and interpretation like any “display text” (See Pratt, 1977⁶). Making explicit the use of liberal arts pedagogies in the Business curriculum, starting with MGMT 100, will have an influence and impact on the education of all Wharton undergraduates.

The third goal is highlighting liberal arts content in upper level courses. For example, the Legal Studies Department offers a course called the LGST 227: Literature of Success. The course explores the history, literature, and philosophy of two age---old questions: what does it mean to be successful and how does one achieve this elusive goal? It surveys some of the classics of the “success” genre—from Benjamin Franklin's Autobiography in the 18th century to Dale Carnegie's How to Win Friends and Influence People and Marcus Buckingham's Now, Discover Your Strengths in the 20th and 21st centuries. Case studies of remarkable achievements in business and society and Arthur Miller's play Death of a Salesman provide additional contexts within which to reflect on the questions at the center of the course.

Approach: The taxonomy of courses that tacitly enhance liberal learning, liberal arts pedagogies, and liberal arts content will provide a valuable resource to the committee reviewing the whole Wharton undergraduate curriculum and provide a model for other institutions to do the same. Evidence of success is the degree to which faculty show interest in the resulting catalogue of courses. The lead investigator for Wharton will secure a research assistant for all three years of the grant to mine the many courses that support 20 concentrations of study at Wharton.

In the second and third years, the lead investigator for Wharton will offer seminars for faculty from inside and outside Wharton who are interested in improving teaching and learning by making the most of liberal learning, liberal arts pedagogies, and liberal arts content in their courses. To appeal to the widest audience of faculty, the lead investigator will work with the Center for Teaching and Learning at Penn to advertise the workshops. Preliminary conversations with faculty from across the University are promising. For example, Anthropology Professor Derek Newberry and his mentor Greg Urban are likely participants. They both teach SM 347: The Anthropology of Corporations. The course begins with the assumption that modern business corporations can be characterized as having their own internal cultures, more or less distinct from one another. Corporations also exist within encompassing cultures and cultural flows. At the same time, corporations are producers and disseminators, and thus have effects on their surrounding environments, effects that extend from the local to the global. The Anthropology of Corporations examines modern corporations from these three perspectives through theoretical and ethnographic readings, guest speakers from the corporate world, and independent research conducted by the students.

Measures of Success

In light of the innovative and adaptive approach characterizing the proposed initiative, Berwood Yost, director of the COR, will use developmental evaluation approaches to assess project outcomes^{7,8}. Michael Quinn Patton, one of the early practitioners of developmental evaluation, describes the process as follows:

*Evaluation processes and activities that support program, project, personnel and/or organizational development (usually the latter). The evaluator is part of the team whose members collaborate to conceptualize, design, and test new approaches in a long-term, on-going process of continuous improvement, adaptation, and intentional change. The evaluator's primary function in the team is to elucidate team discussions with evaluative data and logic, and to facilitate data-based decision-making in the developmental process.*⁹

The general learning outcomes guiding the evaluation include the following:

PENN

Enhance student capacities for the following competencies:

- Analytical thinking
- Multiple framing
- Reflective exploration of meaning
- Practical reasoning

Appendix B: Dataset of Wharton syllabi, screened for “creative thinking” objectives
Compiled by Jennie Walsh, edited by Emily Hu

Course	Title	Professor/ Section	Notes	Offered	Course Object	Assignment or Class Session Objecti
BEPP 203	Business in the Global Political Environment	Anagol & Wang / Jensen	You should try to be creative in choosing the format that best communicates the substantive issues involved and how they relate to the topics of BEPP 203.		N	Y
LGST 210	Corporate Responsibility & Ethics	Petkoski	The debates will be graded on the basis of persuasiveness, creativity, and responsiveness to the other students' arguments.	2017A	N	Y
LGST 221	Constitutional Law and Free Ent	Sepinwall	In judging the briefs, I'll be asking questions such as: 3) Did this team come up with some creative arguments that others did not have?	2017A	N	Y
LGST 222 / OIDD 222	Internet Law and Policy	Werbach	* Creativity: The paper is original, interesting, and presented in an engaging manner.	2016C	N	Y
LGST 226	Markets, Morality & Capitalism	Cornell	The top papers will also add some intellectual creativity or value (i.e. say something non-obvious).	2016C	N	Y
LGST 240 / OPIM 240	Gamification for Business	Werbach	Humor and creativity are encouraged! (re: specific assignment)	2016A	N	Y
MGMT 100	Leadership and communication in groups	Barone, Boyer, Greenhalgh, Hirshon, Newberry	Creative. Structure the way you execute your project but leave room for creativity.	2016C	N	Y
MGMT 100	Leadership and communication in groups	Greenhalgh, Newberry	Creative. Structure the way you execute your project but leave room for creativity.	2016A	N	Y
MGMT 101	Introduction to Mangement	Sharma	Further, an excellent presentation is likely to be one for which the team uses management theories and concepts not just accurately and appropriately, but also creatively and critically	2016C	N	Y
MGMT 104	Industrial Relations and Human Resource Management	Young-Hyman	Creativity and insight: The material is presented in an original and engaging manner.	2016A	N	Y
MGMT 111	Multinational Mangement	Tschoegl	* Is your memo particularly creative in its take on the topic? _____	2016C	N	Y
MGMT 212	Social Entrepreneurship	Thompson	This is part of the course is going to push you to the edge of your creativity, so this course is not for the faint of heart or feeble of spirit!	2016A	N	Y
MGMT 238	Organizational Behavior	Grant	(For papers) Creativity and insight: The material is presented in an original, engaging, and interesting manner.	2016C	N	Y
MGMT 272	POWER AND POLITICS IN ORGANIZATIONS	Nurmohamed	! Shows curiosity, creativity, and the willingness to experiment; You should draw on course concepts in a creative manner to come up with a sensible solution that should aim to "knock our socks off." Be creative and brave	2015C	N	Y
MGMT 291 / OIDD 291 / LGST 206	Negotiation and Conflict Resolution	Bellace	* The creativity to execute deals that others might overlook;	2016A	Y	N
MGMT 291 / OIDD 291 / LGST 206	Negotiation and Conflict Resolution	Rosner	* The creativity to execute deals that others might overlook;	2016C	Y	N
MGMT 291 / OIDD 291 / LGST 206	Negotiation and Conflict Resolution	Yip	Outstanding contributions are highly insightful and thoughtful comments that deepen the analysis, challenge the other students and instructor to think more deeply, and/or offer novel and creative perspectives about the issues at hand.	2017A	N	Y

MKTG 211	Consumer Behavior	Cutright	<i>Five minds will come up with more creative, clever, and refined ideas than one working alone. You can create PowerPoint slides or be creative and do something interactive with the class</i>	2016A	N	Y
MKTG 211	Consumer Behavior	Mellers	<i>You can (and should) be creative at this point Use creative ways of keeping the audience involved</i>	2016A	N	Y
MKTG 221	New product Management	Armstrong	<i>2. Creativity and Evaluation: Finding and Developing</i>	2015C	N	Y
MKTG 224	Advertising Management	Armstrong	<i>We will also discuss how to find creative people, generate creative ideas, and implement creative ideas.</i>	2016C	N	Y
MKTG 266	Marketing for Social Impact	Small	<i>3 = A solid application of the course material, with some good points but few creative insights. This course will help you develop knowledge and skills in the creative and rigorous application of marketing strategy concepts and methods in order to enhance long run value for business entities.</i>	2016C	N	Y
MKTG 277	Marketing Strategy	Robertson	<i>The objectives of this course are to enhance the students' (a) creativity, (b) ability to innovate and (c) ability to identify, recruit, develop, manage, retain, and collaborate with creative people.</i>	2016C	Y	N
MKTG 292	Creativity	Schrift		2015C	Y	Y

Appendix C: IRB Exemption

University of Pennsylvania
Office of Regulatory Affairs
3624 Market St., Suite 301 S
Philadelphia, PA 19104-6006
Ph: 215-573-2540/ Fax: 215-573-9438
INSTITUTIONAL REVIEW BOARD
(Federalwide Assurance # 00004028)

22-Mar-2017

Anne M Greenhalgh
greenhaa@wharton.upenn.edu

PRINCIPAL INVESTIGATOR	: Anne M Greenhalgh
TITLE	: Do undergraduate business schools cultivate creative thinking; The Wharton undergraduate curriculum as a case in point
SPONSORING AGENCY	: No Sponsor Number
PROTOCOL #	: 826588
REVIEW BOARD	: IRB #8

Dear Dr. Greenhalgh:

The above-referenced research proposal was reviewed by the Institutional Review Board (IRB) on 21-Mar-2017. It has been determined that the proposal meets eligibility criteria for IRB review exemption authorized by 45 CFR 46.101, category 1.

This does not necessarily constitute authorization to initiate the conduct of a human subject research study. You are responsible for assuring other relevant committee approvals.

Consistent with the federal regulations, ongoing oversight of this proposal is not required. No continuing reviews will be required for this proposal. The proposal can proceed as approved by the IRB. This decision will not affect any funding of your proposal.

Please Note: The IRB must be kept apprised of any and all changes in the research that may have an impact on the IRB review mechanism needed for a specific proposal. You are required to notify the IRB if any changes are proposed in the study that might alter its IRB exempt status or HIPAA compliance status. New procedures that may have an impact on the risk-to-benefit ratio cannot be initiated until Committee approval has been given.

If your study is funded by an external agency, please retain this letter as documentation of the IRB's determination regarding your proposal.

Please Note: You are responsible for assuring and maintaining other relevant committee approvals.

If you have any questions about the information in this letter, please contact the IRB administrative staff. Contact information is available at our website: <http://www.upenn.edu/IRB/directory>

Thank you for your cooperation.

Sincerely,

Digitally signed by
Stephanie Lesage
Stephanie Lesage

Date: 2017.03.23 13:01:16 -04'00'

Appendix D: Copy of Faculty Email Request

Dear [Name],

My name is Emily Hu and I am a senior in Wharton. This semester, I have been working with Professor Anne Greenhalgh for my senior research project, as part of the Joseph Wharton Scholars program. I hope to discover if and how business schools cultivate creative thinking skills, using the Wharton undergraduate curriculum as a starting point. My research will also work in support of Professor Greenhalgh's existing grant from the Teagle Foundation, "Redrawing the Map for Liberal Learning in the Undergraduate Business Curriculum: A Heterogeneous Exploration Addressing All Stages of the Student Experience."

For my research, I have identified faculty whose syllabi include objectives of "creativity" or "creative thinking." I found that your syllabi from [Course Code], includes [Quote]. As such, I write to ask if you would be willing to be interviewed for my research.

I am especially interested in hearing about your thoughts on higher education, creative thinking, and methodologies for cultivating creative thinking in undergraduate business classrooms. The recorded interview would take no longer than an hour, and take place at a time and location that works for you. Though I cannot compensate you, I would be very appreciative of your time.

Please do not hesitate to reach out with any questions or comments. Thank you for your consideration, and I look forward to hearing from you.

Best,
Emily

Appendix E: Copy of Student Email Request

Dear Students -

I am working on a research grant funded by the Teagle Foundation. I am doing an assessment of the Wharton Undergraduate curriculum. With the help of a research assistant, I have downloaded all of the syllabi for our 100, 200, and 300 level courses at Wharton. I am combing through syllabi in search of liberal arts content (novels, poetry, film, drama...), pedagogy (especially, the use narrative), and skills (creative thinking, problem solving, application, and reflection).

Emily Hu, one of my former students and MGMT 100 TAs, is writing a senior thesis that piggy-backs on the grant. Emily is interested in discovering how business schools cultivate creative thinking skills, in particular, and she is using the Wharton undergraduate curriculum as a starting point.

Emily would like to interview you about your experience of your Wharton undergraduate business education. The recorded interview would take place at a time and location that works for you and take no longer than forty-five minutes. Please reply to her email address -- emilyhu@wharton.upenn.edu - copied here if you are willing to speak with her. She would be very appreciative of your time. Your insights have the potential to help shape undergraduate business education!

Thank you for fielding this request!

With best regards,
Dr. G.

Appendix F: List of Interview Subjects:

- **Faculty:**

1. Anne Greenhalgh (Management)
2. Samir Nurmohamed (Management)
3. Payal Sharma (Management)
4. Adrian Tschoegl (Management)
5. Nicolas Cornell (Legal Studies)
6. Richard Shell (Legal Studies)
7. Scott Barry Kaufman (Positive Psychology, College of Arts and Sciences)

- **Student:**

1. Philip Chen (Freshman)
2. Nathan Chiu (Freshman)
3. Maria Curry (Freshman)
4. Alexandra Lorenzotti (Freshman)
5. Akshay Malhotra (Freshman)
6. Annissa Ramadhanti (Freshman)
7. Bradley Smith (Freshman)
8. Zack Varrato (Freshman)
9. Victoria Warner (Freshman)
10. Stefanie Williams (Freshman)
11. Dylan Denman (Sophomore)
12. Rehan Ayrton (Junior)
13. Eric Helfgott (Junior)
14. Hunter Cook (Senior)
15. Andrea Pascual (Senior)

Copies of interview transcripts can be made available upon request.

To inquire, please contact Emily Hu at Emily.yin.hu@gmail.com.

Appendix G: Faculty Interview Guide

Faculty Interview Subject Interview Guide

1. HIGHER EDUCATION

- a. What do you think is the purpose of higher education?
- b. Why did you become an educator?
- c. There is a growing trend in academia of intertwining liberal learning (i.e. liberal arts) with teaching for the professions, which includes undergraduate business schools. What do you think about this?

2. CREATIVE THINKING

- a. How do you define creative thinking?
- b. Do you think you can teach creative thinking?
- c. How important do you think it is for students to cultivate creative thinking skills?
 - i. How important do you think it is to cultivate creative thinking skills in undergraduate business schools?
 - ii. How important do you think it is to cultivate creative thinking skills for the workforce?

3. WHARTON UNDERGRADUATE CURRICULUM

- a. Do you think Wharton (meaning the entire institution, including students, faculty/staff, policies, etc.) values creative thinking? Why or why not?
- b. What does Wharton do well in cultivating creative thinking, if anything? What could it do better, if anything?
- c. Can you compare your experience with Wharton with other schools you have taught at?
- d. Can you compare your experience with other schools within Penn you have taught at?

4. METHODOLOGIES FOR CREATIVE THINKING

- a. Why did you include this objective of cultivating creative thinking in your course design?
- b. How have students responded to this objective?
- c. Tell me about a time a student effectively cultivated creative thinking in one of your courses.
- d. What do you think is the best methodology for cultivating creative thinking?
 - i. How do you know it is working?
 - ii. What are the challenges to this methodology?

5. DEMOGRAPHICS

- a. Gender
- b. Professional history, years at Wharton
- c. Courses taught

Appendix H: Student Interview Guide

Student Interview Subject Interview Guide

6. HIGHER EDUCATION

- a. What do you hope to gain out of your college experience?
- b. Why did you choose to come to Penn? Wharton?
- c. There is a growing trend in academia of intertwining liberal learning (i.e. liberal arts) with teaching for the professions, which includes undergraduate business schools. What do you think about this?

7. CREATIVE THINKING

- a. How do you define creative thinking?
- b. Can you learn creative thinking? Can you teach it?
- c. What or who is a telling example of creative thinking epitomized?
- d. Are you satisfied with your creative thinking skills?
- e. How important do you think it is to cultivate creative thinking skills?
 - i. How important do you think it is to cultivate creative thinking skills in undergraduate business schools? More or less so than other schools?
 - ii. How important do you think it is to cultivate creative thinking skills for the workforce?

8. WHARTON UNDERGRADUATE CURRICULUM

- a. Tell me about a time you feel you exhibited creative thinking in a Wharton class.
- b. Tell me about a Wharton assignment, professor, or class that you think effectively cultivated creative thinking.
- c. What does Wharton do well in cultivating creative thinking, if anything? What could it do better, if anything?

9. DEMOGRAPHICS

- a. Gender
- b. Age
- c. Academics
 - i. Degree program
 - ii. Graduating Year
 - iii. Concentrations
 - iv. Minors

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